REMARKS

A new title and a new Abstract are provided above, as requested.

The rejections of claims 17, 19 and 21 under 35 USC 102 from one or more of the cited Landt, Gutshall, McMurray and Barth patents is traversed. The Landt, Gusthall, McMurray and Barth patents do not disclose the characteristic feature of the present invention that "the maximum height of the edge of the locking projection from the bearing surface of the head is nearly equal to and less than P/n".

This characteristic feature of the present invention is described, for example, in page 28, lines 28 to 33, as:

> Since the height of the edge 306 is nearly equal to and less than P/3, the locking projections 304 can be surely made to sink into the upper surface of the pate P and the bearing surface 303 can be brought into contact with the upper surface of the plate B before the self-locking bolt 310 is turned by 12/3 of one full turn. (emphasis added) Page 28, line 33, to page 29, line 5.

Since the locking projections 304 can be surely made to sink into the upper surface of the plate B before the self-locking bolt 310 is turned by 1/3 of one full turn, each of the locking projections 304 can trace on the portion of the upper surface of the plate D where other neighboring locking projection 304 has not yet traced on, and as the result, each of the locking projections 304 makes it possible to sink strongly into the upper surface of the plate B.

> Since the height of the edges 306 of the locking projections 304 is as small as a value nearly equal to or less than P/3, locking projections 304 can be made to sink into the upper surface of the plate B by a depth sufficient for the locking projections 304 to exercise their locking function. Thus, the plates B and C can be firmly fastened together with the self-locking bolt 310. The locking projections 304 made to sink fully in the upper surface of the plate B exercise their locking function with reliability. Page 28, line 33, to page 29, line 5.

The rejection of claims 18 and 20 and as it might apply to new claim 23, which corresponds to claim 18, under 35 USC 102 for anticipation by the cited Tabor patent is also traversed. The patent does not disclose the claimed limitations. In particular, please note page 31, lines 8-23, of the specification:

> The self-locking bolt 320 is used effectively for fastening a member of a soft material, such as magnesium or aluminum. when the self-locking bolt 320 is used for fastening a plate B of a soft material to a plate C as shown in Fig. 30, the bearing surface 303 comes into contact with the upper surface of the plate in an early stage of fastening and, as the self-locking bolt 320 is turned further , the plate B of a soft material is compressed by the baring surface 303. In a state where the plates B and C are fastened together with the self-locking bolt 320 in a predetermined condition, the bearing surface 303 compresses the plate B by a high pressure. Consequently, portions of the surface of the plate B are forced to bulge slightly into the locking recesses 324 in small protrusions. The small protrusions are caught by the edges 326 of the locking recesses 324, so that the self-locking bolt 320 is locked into place.

Reconsideration and allowance are, therefore, requested.

Respectfully submitted,

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18. (amended) A self-locking bolt having:

a head having a locking function; and

a threaded part extending from the head and provided with an external thread of a pitch P;

wherein n locking recesses are formed at equal angular intervals in a bearing surface of the head, the depth of each locking recess from the bearing surface of the head decreases gradually in a direction opposite a fastening direction in which the bolt is rotated for fastening to a minimum depth, and an edge is formed at the joint of an end wall of the locking recess at a position at a maximum depth and the bearing surface of the head,

wherein when the bearing surface compresses a member contacting the bearing surface, the edge functions so that a portion of the member is forced to bulge into the locking recess in a small protrusion.

Sub B1 >

ABSTRACT

A self-locking bolt has a head with a bearing surface and a threaded part extending from the bearing surface and provided with an external thread of a pitch P for fastening to a first member when the head and threaded part are rotated in a fastening direction. There are n locking projections or recesses at equal angular intervals on the bearing surface, heights or depths of the locking projections or recesses from the bearing surface increasing or decrease gradually in a direction opposite the fastening direction from maximums to minimums with edges of the locking projections or recesses at junctions of the bearing surface and end walls A1 of the locking projections or recesses at the maximums. The maximum height of the edge of the locking projections from the bearing surface of the head is nearly equal to and less than P/n. A second member that is between the bearing surface and the first member when the head and threaded part are rotated in the fastening direction bulges into the locking recesses .